



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

①

D119-796-241TRN
Job Sheet 169264-D



Part No: D119-796-241TRN

Job Qty: 1 ea

Part Name: Crosstube Turning Detail



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 12/5/17

Job Tracking No:

Due Date: 12/15/17

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG REV J IPP REV A RQ 14/05/27 VERIFIED BY DD IPP REV:B 16.05.04 AS PER DWG REV.I DD
VERF:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		12/14/17	0.00	0.00	Start Up Crosstubes-1		PMP
100	Mori Seiki	1 pcs		12/14/17	1.77	1.72	Mori Seiki TL-40		PMP
110	QC	1 pcs		12/14/17	0.00	0.00	QC2-1		PMP
120	Mori Seiki	1 pcs		12/14/17	0.00	1.72	Mori Seiki TL-40		PMP
130	QC	1 pcs		12/14/17	0.00	0.00	QC2-1		PMP
140	QC	1 pcs		12/14/17	0.00	0.00	QC8		PMP
145	Crosstubes	1 pcs		12/14/17	0.00	0.45	Crosstubes-1		PMP
150	HandFXtube	1 pcs		12/15/17	0.00	0.33	Crosstubes-3		PMP
160	QC	1 pcs		12/15/17	0.00	0.00	QC7-1		PMP
170	Packaging	1 pcs		12/15/17	0.00	0.00	Packaging3-1		PMP
180	QC21-FG	1 Ea		12/15/17	0.00	0.00	QC21		PMP

Part Op 100 - 1-Fill tube with sand & install plugs on both ends as per Folio FB298 2-Turn first side as per Folio FB298

Descriptions: 120 - 1-Turn second side as per Folio FB298

145 - GRIND ONLY TRANSITION LINES SMOOTH LONGITUDE WAY.

150 - 1- handfinish X-TUBE INSIDE AND OUT

170 - LOCATION : LG014

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	D6023-106	1	45	0	0

B150 731

Part Specifications

Specifications could not be found.

Plex 12/5/17 2:45 PM Dart.lajeunesse.marie

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

W. DART Aerospace Ltd. 1270 Aberdeen Street Hawkesbury, ON K6A 1K7 CANADA TEL.: 1 613 632-5200 Email: sales@dartaero.com www.dartaerospace.com S025298 Crosstube Turning Detail PART NO: D119 - 796 - 241TRN Revision: Start up Operation Operation: Mfg Date: 12/19/17 Change No: Job No: 169264 - D	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="5" style="text-align: center;">AGAINST DEPARTMENT/PROCESS</th> </tr> <tr> <td style="width: 15%;">Work</td> <td style="width: 15%;">Skid-tube</td> <td style="width: 15%;">Cross tube</td> <td style="width: 15%;">Water Jet</td> <td style="width: 15%;">Engineering</td> </tr> <tr> <td>Crash</td> <td>Machining</td> <td>Small Fab</td> <td>Prod. Eng. Coord.</td> <td>Quality</td> </tr> <tr> <td>Is-is</td> <td>Thermoforming</td> <td>Finishing</td> <td>Rec/Store/Packaging</td> <td>Other</td> </tr> <tr> <td>ved</td> <td>Large Fab</td> <td>Composite</td> <td>Supplier</td> <td></td> </tr> <tr> <td colspan="3">QTY Effective :</td> <td colspan="2">MRB (QSI042) Approval</td> </tr> <tr> <td colspan="5" style="text-align: center;">Disposition</td> </tr> <tr> <td colspan="5" style="height: 150px;"></td> </tr> <tr> <td colspan="5">Completed By</td> </tr> <tr> <td colspan="5">Lead hand / Supervisor Approval Verification</td> </tr> <tr> <td colspan="5">QC / QA Coordinator Approval</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3" style="text-align: center;">FAULT CATEGORY</th> </tr> <tr> <td style="width: 33%;"> ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes </td> <td style="width: 33%;"> ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center </td> <td style="width: 33%;"> ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence </td> </tr> </table>	AGAINST DEPARTMENT/PROCESS					Work	Skid-tube	Cross tube	Water Jet	Engineering	Crash	Machining	Small Fab	Prod. Eng. Coord.	Quality	Is-is	Thermoforming	Finishing	Rec/Store/Packaging	Other	ved	Large Fab	Composite	Supplier		QTY Effective :			MRB (QSI042) Approval		Disposition										Completed By					Lead hand / Supervisor Approval Verification					QC / QA Coordinator Approval					FAULT CATEGORY			☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes	☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center	☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence
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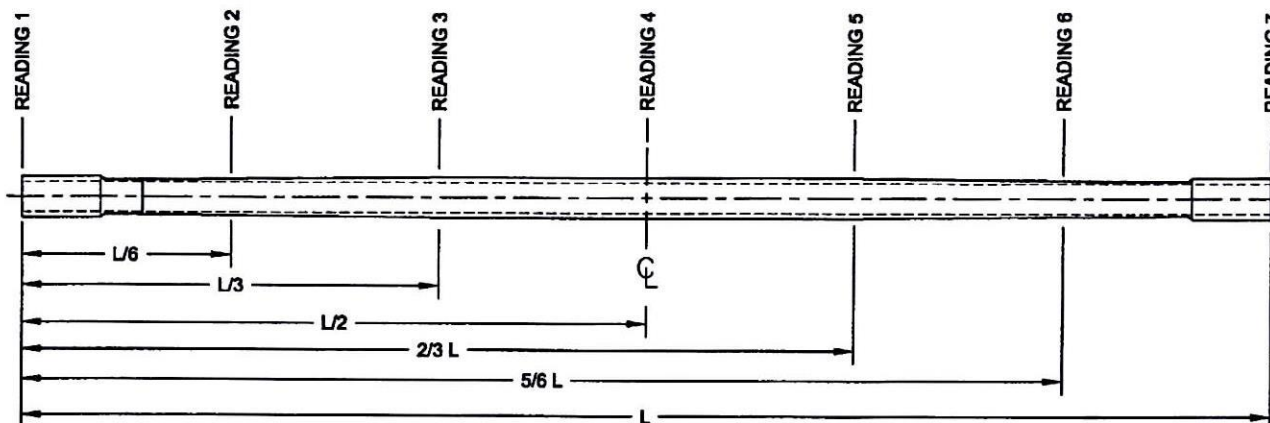
DART AEROSPACE LTD		Work Order: 169264-D
Description: Crosstube Assembly (AW119 MKII Aft)		Part Number: D119-796-241TRN
Inspection Dwg: D119-796-241 Rev: J		Page 1 of 2

FIRST ARTICLE INSPECTION CHECKLIST

Inspection Sheet Drawing Dimension		Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	5.88	+/-0.030	5.818		✓	VERU08	
	2.516	+0.005/-0.000	2.520			↓	
	2.626	+0.005/-0.000	2.630				
	2.627	+0.005/-0.000	2.631				
	2.798	+0.005/-0.000	2.802				
	2.799	+0.005/-0.000	2.804	✓			
	2.989	+0.005/-0.000	2.994	✓			
	3.191	+0.005/-0.000	3.196	✓			
	3.200	+0.005/-0.000	3.203	✓			
SIDE B	5.88	+/-0.030	5.829		✓	VERU08	
	2.516	+0.005/-0.000	2.520	✓		↓	
	2.626	+0.005/-0.000	2.630	✓			
	2.627	+0.005/-0.000	2.631	✓			
	2.798	+0.005/-0.000	2.802	✓			
	2.799	+0.005/-0.000	2.804	✓			
	2.989	+0.005/-0.000	2.994	✓			
	3.191	+0.005/-0.000	3.196	✓			
	3.200	+0.005/-0.000	3.202	✓			
	105.71	+/-0.020	105.710	✓		TAPE	

DART AEROSPACE LTD	Work Order:	165264-D
Description: Crosstube Assembly (AW119 MKII Aft)	Part Number:	D119-796-241TRN
Inspection Dwg: D119-796-241 Rev: J		Page 2 of 2

WALL THICKNESS MEASUREMENT



Location	WALL THICKNESS MEASUREMENT (IN)				Deviation Δw (max-min)	TOLERANCE
	w1	w2	w3	w4		
READING 1 L= 0"	131	123	125	129	.008	0.030"
READING 2 L= 17.62	201	192	205	209	.017	
READING 3 L= 35.24	301	302	305	302	.004	
READING 4 L= 52.86	486	463	462	483	.024	0.063"
READING 5 L= 70.47	312	303	293	305	.019	
READING 6 L= 88.09	212	199	193	205	.019	
READING 7 L= 105.71	127	132	131	127	-.005	

Calibration Result

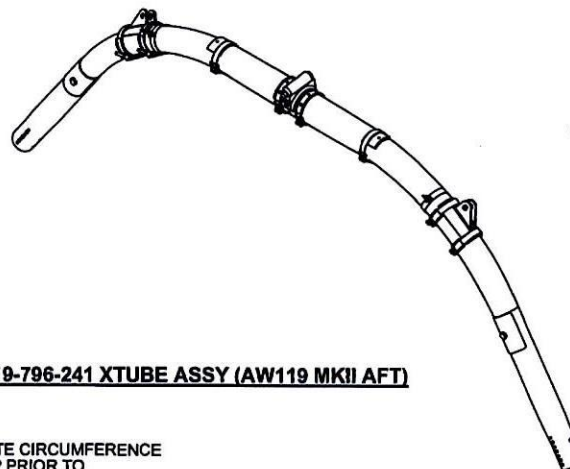
Actual Block Thickness: 100-500

SITESCAN 250 Measured Thickness: 100-500

Measured by:	PMP	Audited by:	DAS 47 9-85	Preliminary Approval:	
Date:	2017-12-19	Date:	17-12-28	Date:	

Rev	Date	Change	Revised by	Approved
A	14.09.18	New Issue (P/O D119-796-201)	KJ	
B	15.03.12	Dimensions updated per Dwg Rev F	KJ	
C	15.04.14	Tolerance dimensions revised on Wall Thickness table	KJ	
D	15.05.14	Tolerances revised per Dwg Rev G	KJ	
E	15.09.09	Dwg Rev updated	KJ	
F	16.05.27	Dwg Rev updated	KJ	
G	17.07.12	Dwg Rev updated	KJ	

SHOP COPY
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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 169264-12



D119-796-241 XTUBE ASSY (AW119 MKII AFT)

NOTES:

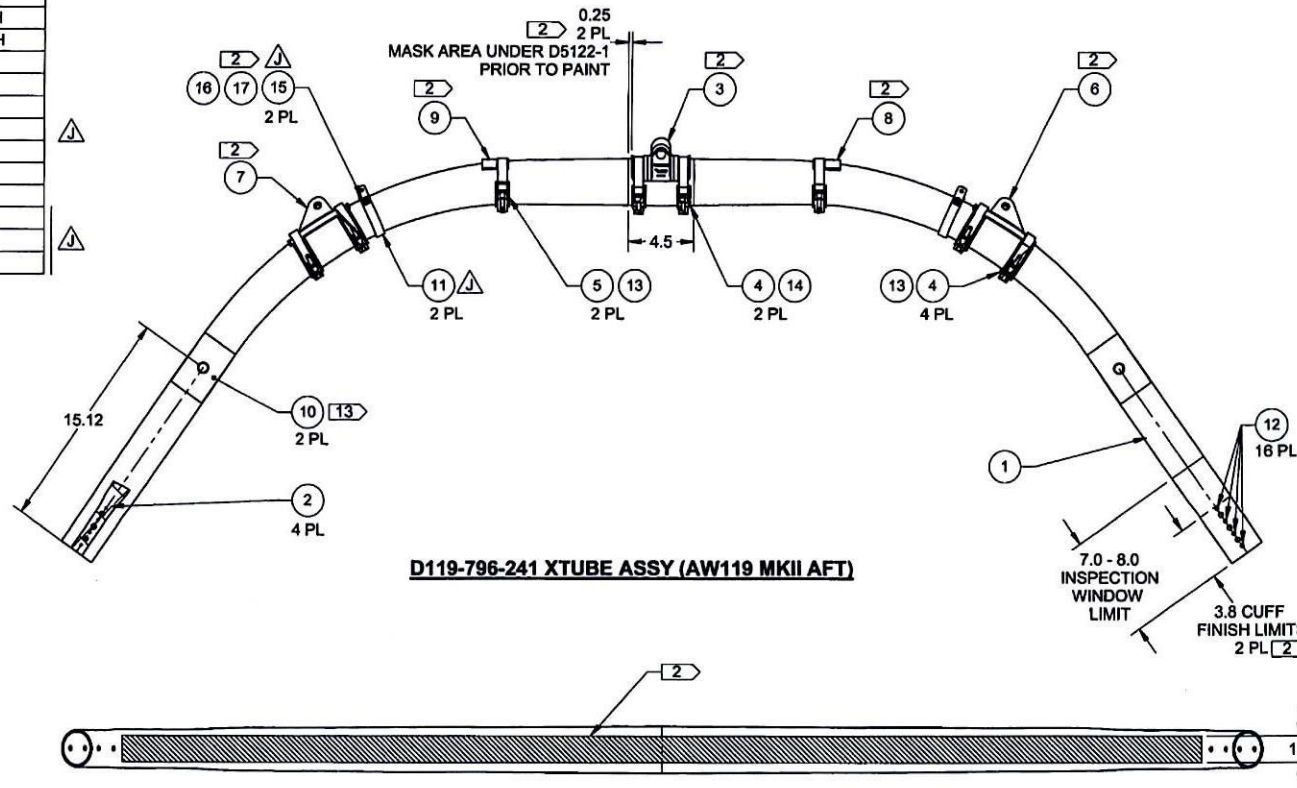
- 1) MATERIAL: N/A
- 2) FINISH: MASK D5134-041/-042 DAMPER SUPPORT ASSEMBLIES, CUFFS, D5136-1/-2 CONTACT PADS, THE COMPLETE CIRCUMFERENCE OF THE TUBE UNDER THE D5122-1 CENTER SUPPORT AND THE TAB ON THE D5515-1 GROUNDING CLAMP PRIOR TO APPLICATION OF CLEAR COAT/PAINT.
IF NECESSARY TOUCH UP PRIMER ON OUTSIDE OF CROSSTUBE PER DART QSI 005 4.2.
APPLY MATTE CLEAR COAT TO THE UNDERSIDE OF CROSSTUBE AS SHOWN (B4-2, HATCHED AREA) PER QSI 005 4.2.
MASK THE UNDERSIDE OF CROSSTUBE AS SHOWN (B4-2, HATCHED AREA).
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY USING PART NUMBER "D119-796-241" AND BATCH NUMBER ON INSIDE OF CUFF PER QSI 044 6.4
- 7) WEIGHT: 26.26 lbs
- 8) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE.
THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM DEFECTS SUCH AS SCRATCHES, NICKS OR DENTS. DEFECTS UP TO 0.005 MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 9) INSTALL D5122-1 CENTER SUPPORT HAND TIGHT ONLY. DO NOT TORQUE. INSTALL RED TAG TO INDICATE "D5122-1 CENTER SUPPORT MUST BE BONDED PER IIN-D119-796 PRIOR TO FLIGHT".
- 10) PRIOR TO FINISHING, ABRASE MATING SURFACES OF D5136-1/-2 AND SURFACE OF CROSSTUBE WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 4105S WASH 'N' WIPE DEGREASER. APPLY A 0.100" MIN THK LAYER OF PROSEAL 890 ON THE INSIDE CONCAVE SURFACE OF THE D5136-1/-2 CONTACT PADS AND INSTALL AT AN 8.4" OFFSET FROM THE CROSSTUBE BENDING PLANE. INSTALL MS21920-25 CLAMPS AND D5123-5 CLAMP CUSHIONS WHILE WET. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.
- 11) TORQUE MS21920 CLAMPS 80 - 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY, THE NUT HAS NOT BOTTOMED-OUT AFTER TORQUING AND THE NUT IS FACING AFT.
- 12) PRIOR TO FINISHING, POSITION AND INSTALL D5134-041/-042 DAMPER SUPPORTS USING JIG DT10085. ABRASE MATING SURFACES OF THE D5134-041/-042 DAMPER SUPPORTS AND CROSSTUBE WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 4105S WASH 'N' WIPE DEGREASER. APPLY A 0.100" MIN THK LAYER OF PROSEAL 890 ON THE INSIDE CONCAVE SURFACE OF THE D5134-041/-042. INSTALL MS21920-25 CLAMPS AND D5123-1 CLAMP CUSHIONS WHILE WET. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS. ENSURE THAT THE MS21920 CLAMPS ARE POSITIONED AS SHOWN IN DETAIL C.
- 13) PRIOR TO FINISHING, ABRASE MATING SURFACES OF CROSSTUBE AND D5152-043 WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 4105S WASH 'N' WIPE DEGREASER. INSTALL D5152-043 WITH LAYER OF PROSEAL 890 ON INSIDE CONCAVE SURFACE, 0.100" MIN THK LOCATE D5152-043 USING TOOL DT10112.
- 14) INSTALL THE D5515-1 GROUNDING CLAMP AND ASSOCIATED HARDWARE PER DETAIL "C" PRIOR TO FINISHING. TORQUE THE MS21042-3 NUT 12-15 IN-LB. COMPLETELY SEAL THE EDGES OF THE CLAMP USING PROSEAL 890.
- 15) CARRY OUT A RESISTANCE CHECK BETWEEN THE D5515-1 GROUNDING CLAMP AND ANY UNPAINTED SECTION OF THE CROSSTUBE IN ACCORDANCE WITH AC43-13-1B CHAPTER 11. MAXIMUM RESISTANCE IS 3 MEGOHMS.

J	ADD NOTE 14 & 15 ON SHT 1, ADD PAINT/PRIMER MASKING LOCATIONS, REVISE NOTES ON SHT 1 & 4, REVISE BOM ON SHT 2 TO ADD GROUNDING CLAMP AND ASSOCIATED HARDWARE. REF PAR 17-580	ML	17.02.10
I	D6023-106 MATERIAL REPLACES D6009-106, D5136-1/-2 & D5134-041/-042 NOW INSTALLED ON PRIMER.	AP	15.10.13
H	NOTE 9 RE-WRITTEN, BONDING INSTRUCTIONS MOVED TO IIN. SEE PREVIOUS REV FOR DETAILS.	AP	15.07.02
G	FINISHING ORDER ADJUSTED, UPDATE BEND TOLERANCE AND TRN DETAIL TOLERANCE TO MATCH D119-796-141 DWG	AP	15.04.24
F	REMOVED PRIMER/PAINT ON CUFFS, 2.518 WAS 2.500 (C8-5)	AP	15.02.03
E	D5152-043 WAS D5150-3, SCOTCH BRITE 7447 RED WAS 180 GRIT SANDPAPER	DB	15.01.15
D	ADD D5150-3 STEP POST (2X), MOVED INSPECTION WINDOW DETAIL TO SHT 1, MODIFIED NOTES ON SH 1& 3	DB	14.11.25
C	CR3212-4-07 RIVETS WAS CR3212-4-05 RIVETS, RADIUS BLOCK WAS NUT PLATE ASSEMBLY (BOM), REMOVED 7.5 DEG CUFF HOLE OFFSET (A1-3), REDUCED CUFF DIA TO 2.500 (C8-5), ADD INSPECTION WINDOW	AP	14.10.23
B	ORIENTATION OF D5122-1 CENTER SUPPORT WAS CORRECTED, D5123-5 ADDED UNDER D5136-1/-2 CONTACT PADS, ADDED D2873-043 NUT PLATE ASSY & CR3212-4-05 RIVETS, ADDED REFERENCE TO SKIDTUBES FOR LOCATING CUFF HOLES, RE-ORGANIZED NOTES, REMOVED REDUNDANT INFORMATION.	AP	14.09.08
A	NEW ISSUE	AP	14.08.07
REV.	DESCRIPTION	BY	DATE
DESIGN	AP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	ML		
CHECKED	JMH	DRAWING NO.	REV. J
MFG. APPR.	DP	D119-796-241	SHEET 1 OF 7
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	XTUBE ASSY (AW119 MKII AFT)	NTS
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RELEASED
2017-05-04
ECN 17-536

APPROVED

ITEM	QTY	P/N	DESCRIPTION
	X	D119-796-241	XTUBE ASSY (AW119 MKII AFT)
1	1	D119-796-241BND	CROSSTUBE, AFT
2	4	D2873-043	RADIUS BLOCK
3	1	D5122-1	CENTER SUPPORT
4	6	D5123-1	CLAMP CUSHION
5	2	D5123-5	CLAMP CUSHION
6	1	D5134-041	DAMPER SUPPORT ASSY, LH
7	1	D5134-042	DAMPER SUPPORT ASSY, RH
8	1	D5136-1	CONTACT PAD, LH
9	1	D5136-2	CONTACT PAD, RH
10	2	D5152-043	AFT POST MOUNT ASSY
11	2	D5515-1	GROUNDING CLAMP
12	16	CR3212-4-07	CSK RIVET, CHERRY MAX
13	6	MS21920-25	CLAMP
14	2	MS21920-28	CLAMP
15	2	MS27039-1-08	SCREW, PAN-HEAD
16	2	MS21042-3	NUT
17	4	NAS1149D0332J	WASHER

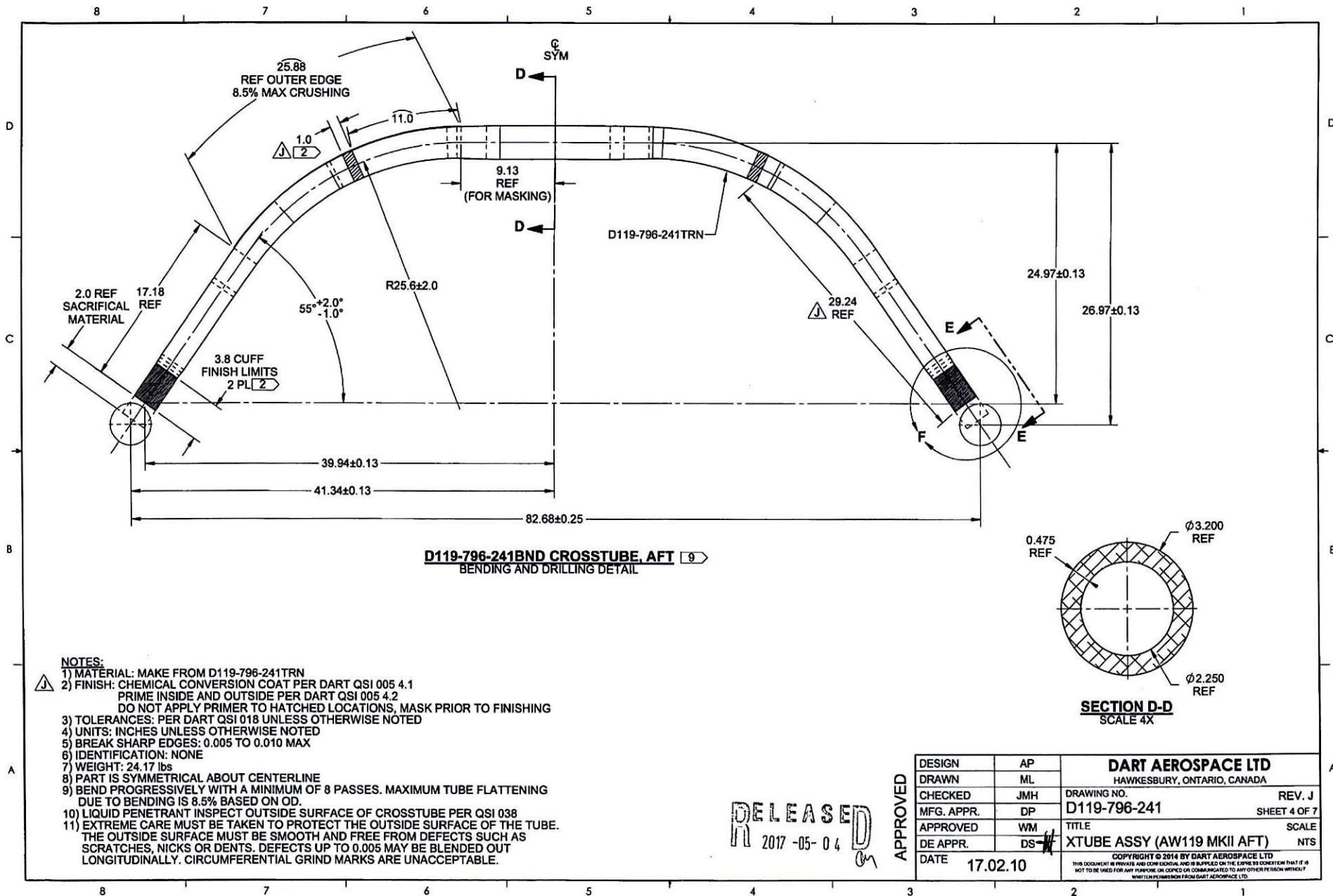


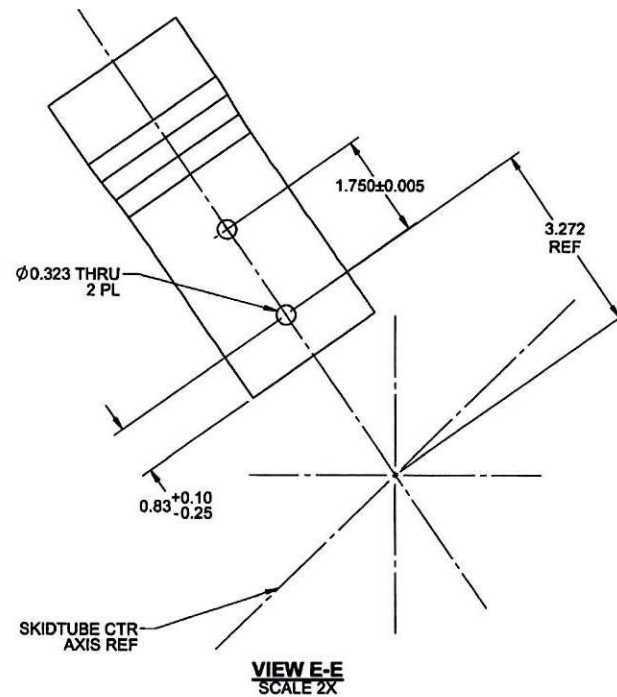
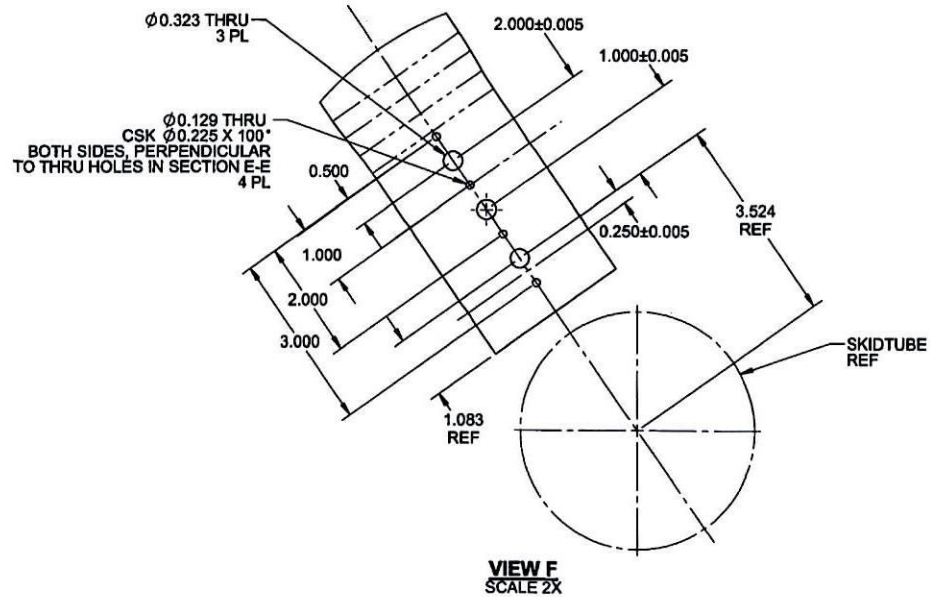
D119-796-241 XTUBE ASSY (AW119 MKII AFT)

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2017-05-04

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DRAWN	ML	HAWKESBURY, ONTARIO, CANADA	
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MFG. APPR.	DP	D119-796-241	SHEET 2 OF 7
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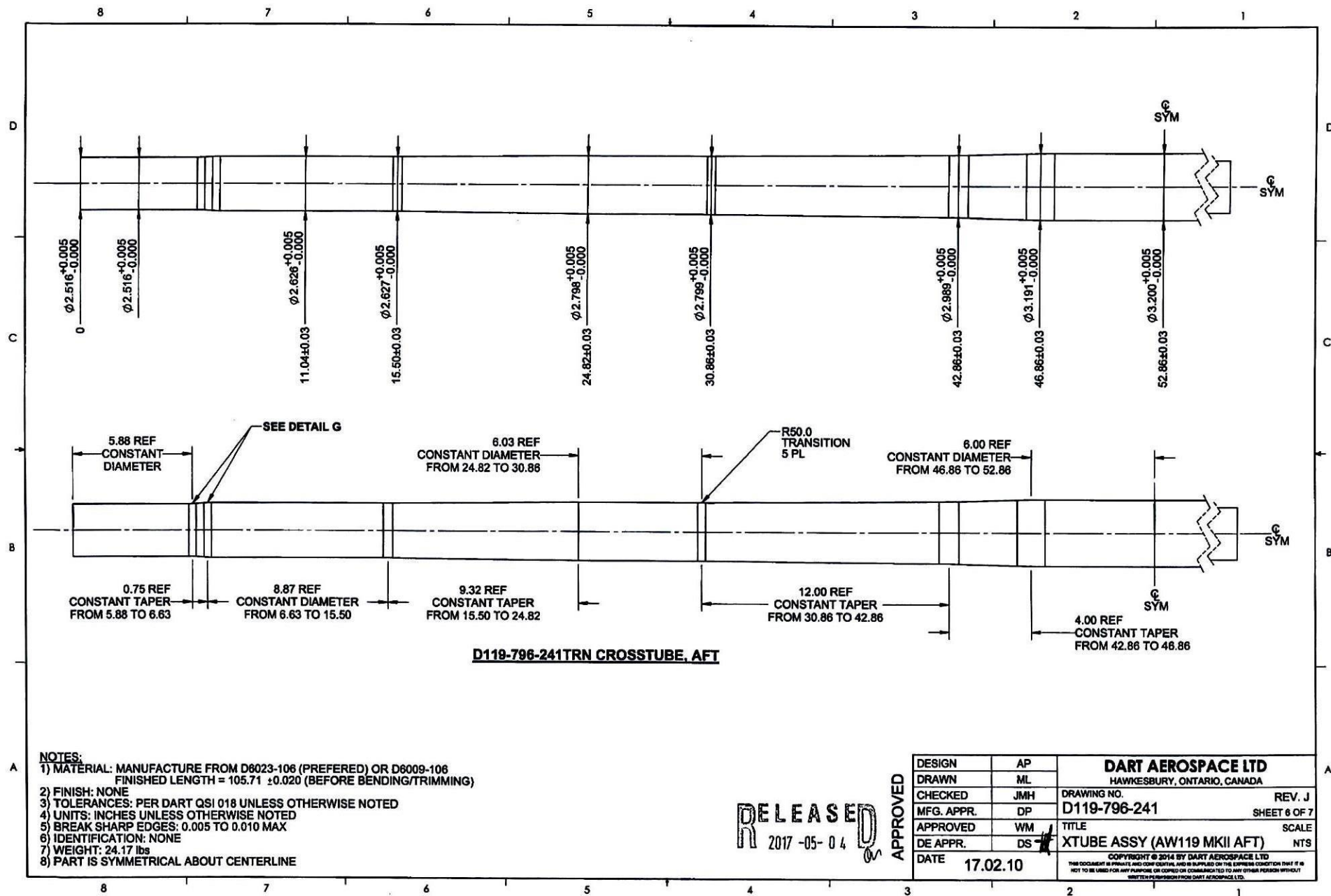


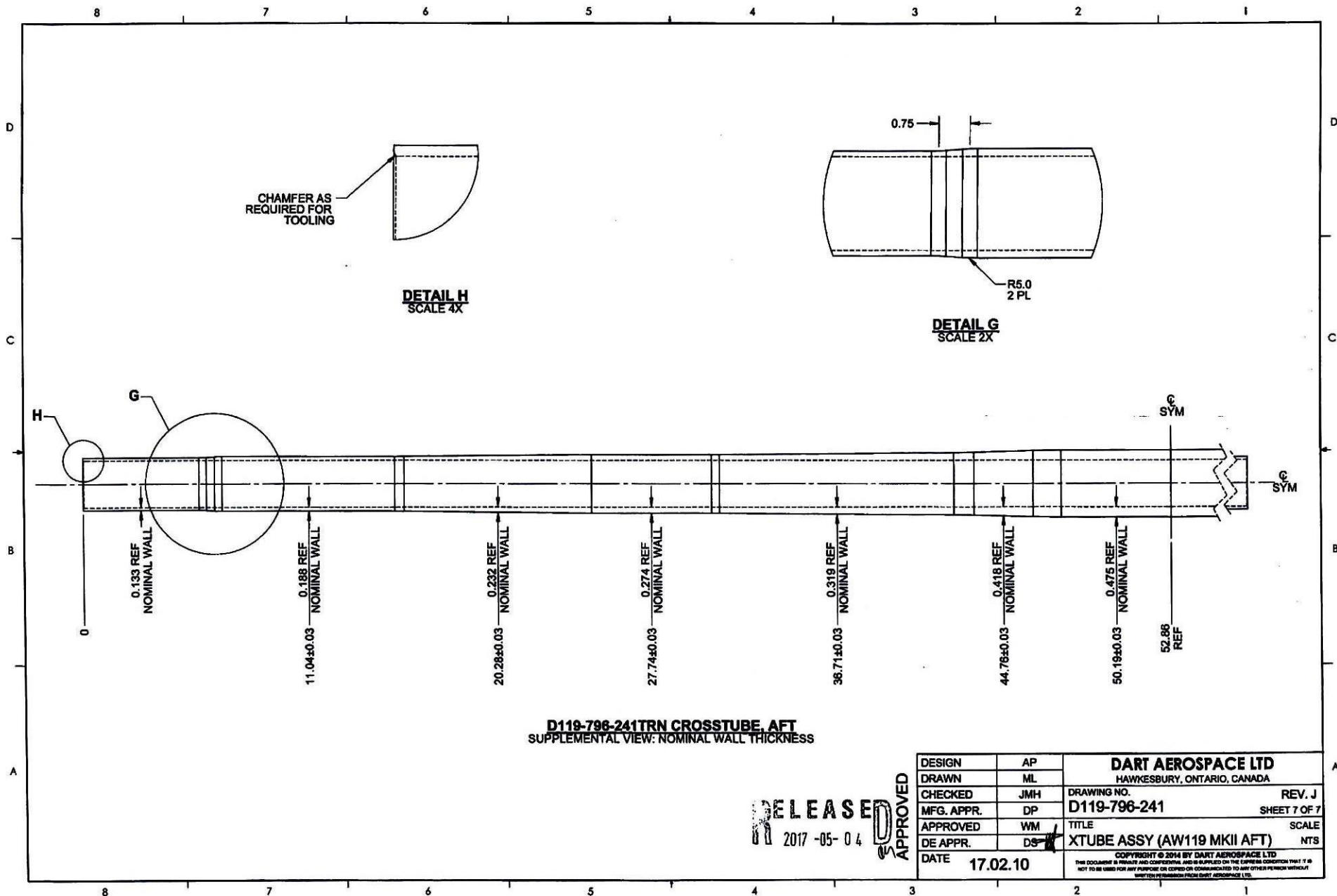


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2017-05-04

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MFG. APPR.	DP	D119-796-241	SHEET 5 OF 7
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